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Doc. No.: 60001.0141US01/MS150538.1
Title: Converting a Hierarchical Data Structure into a Flat Data Structure
Serial No.: 09/615,905
Sheet 1 of 10

6502101

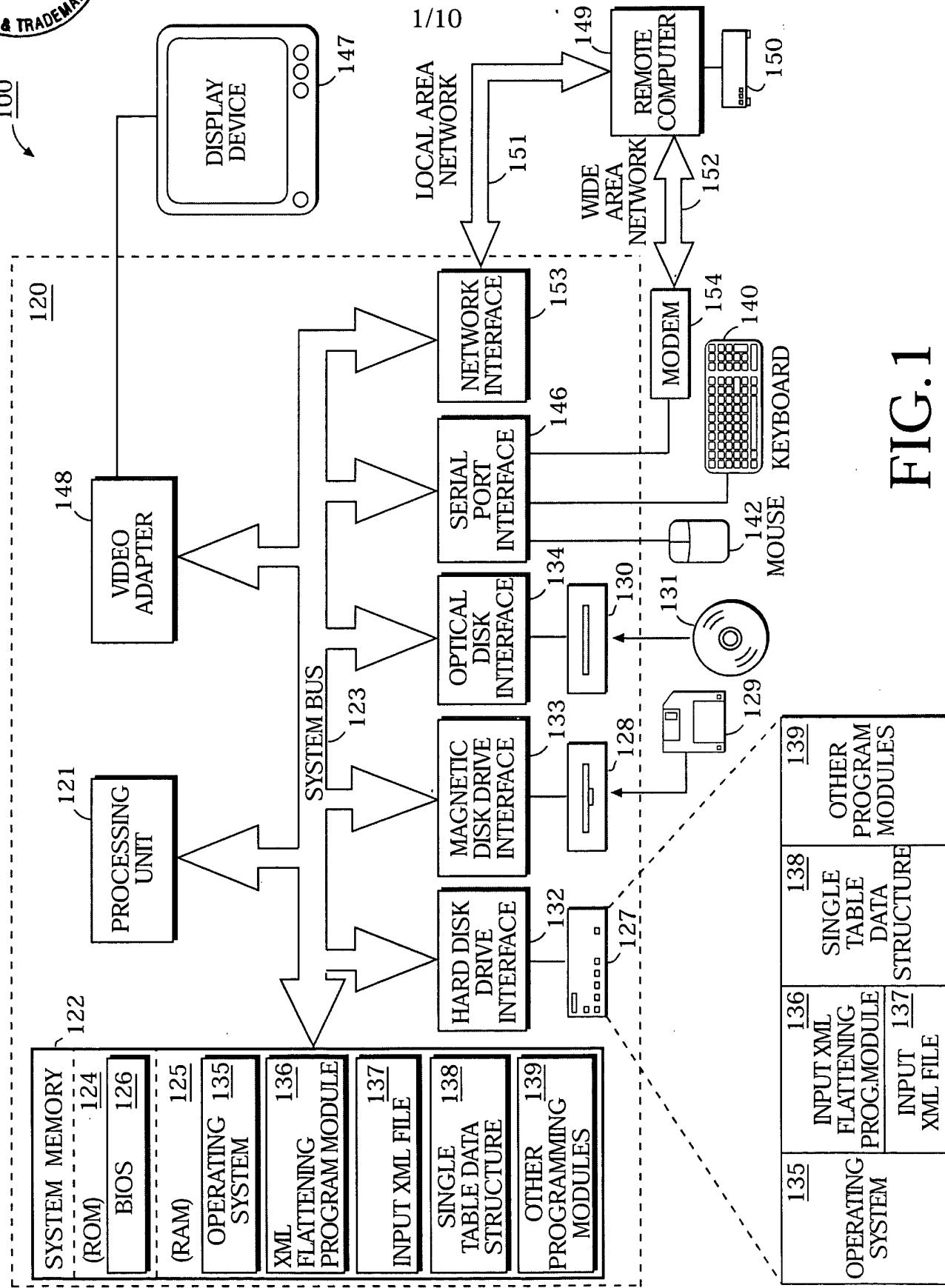


FIG. 1



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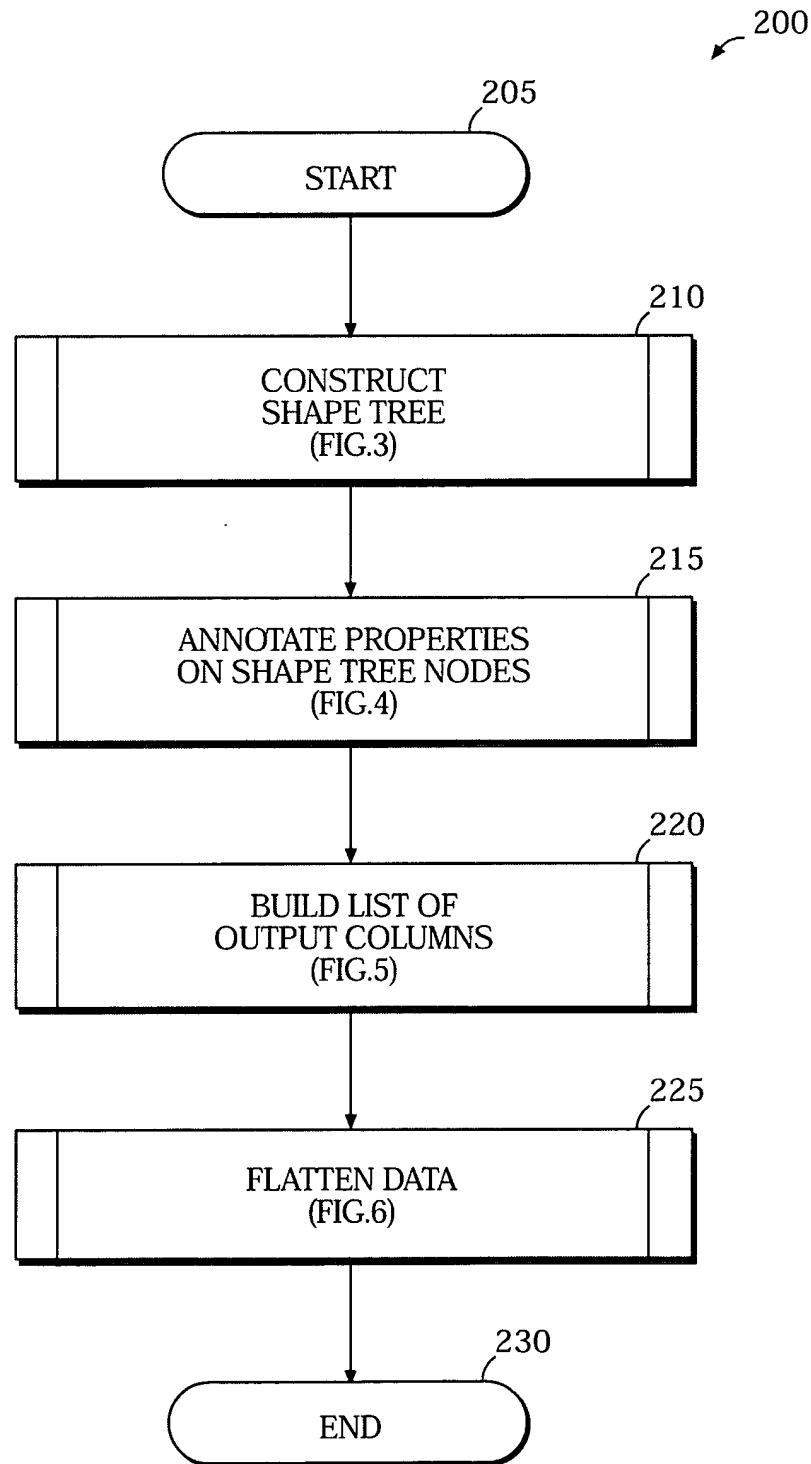


FIG.2



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CONSTRUCT SHAPE TREE

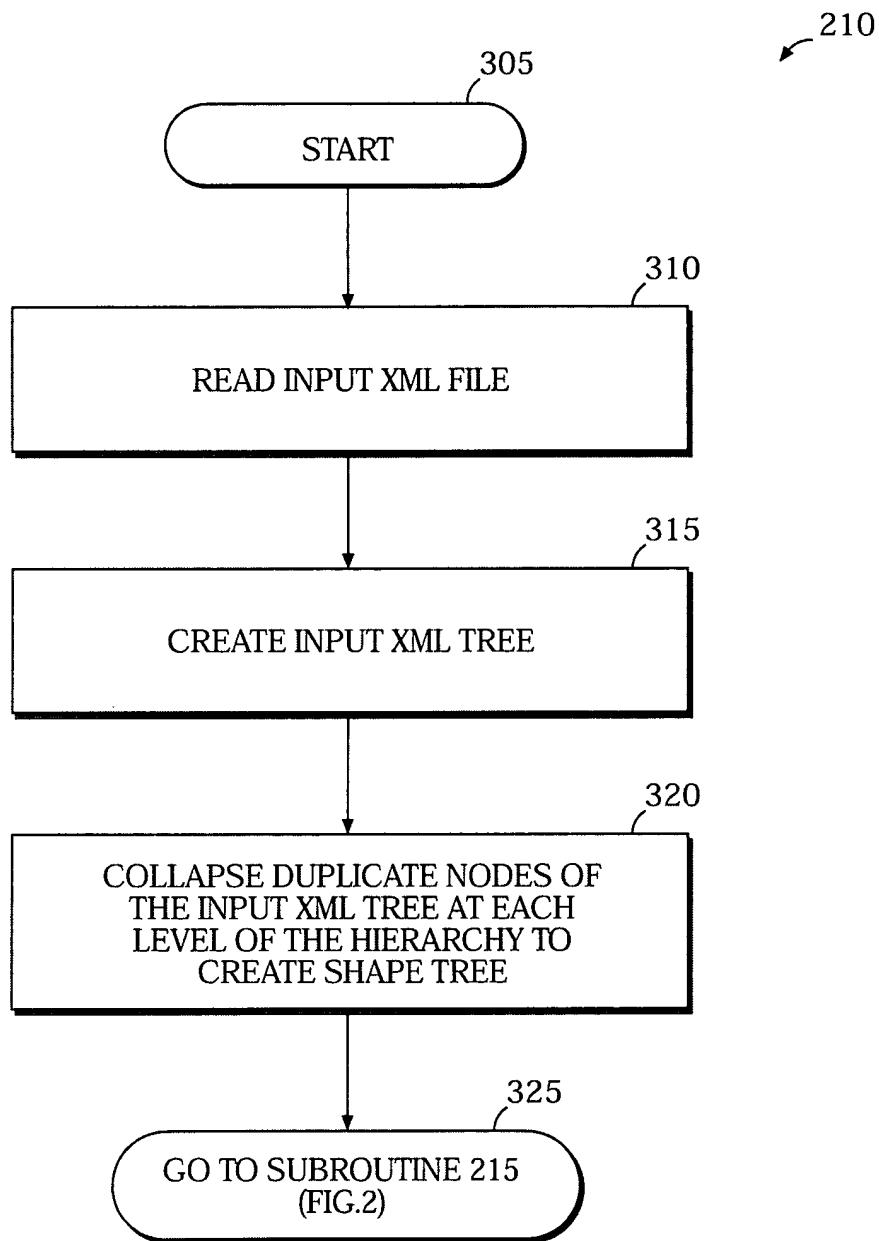


FIG.3



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ANNOTATE PROPERTIES ON SHAPE TREE

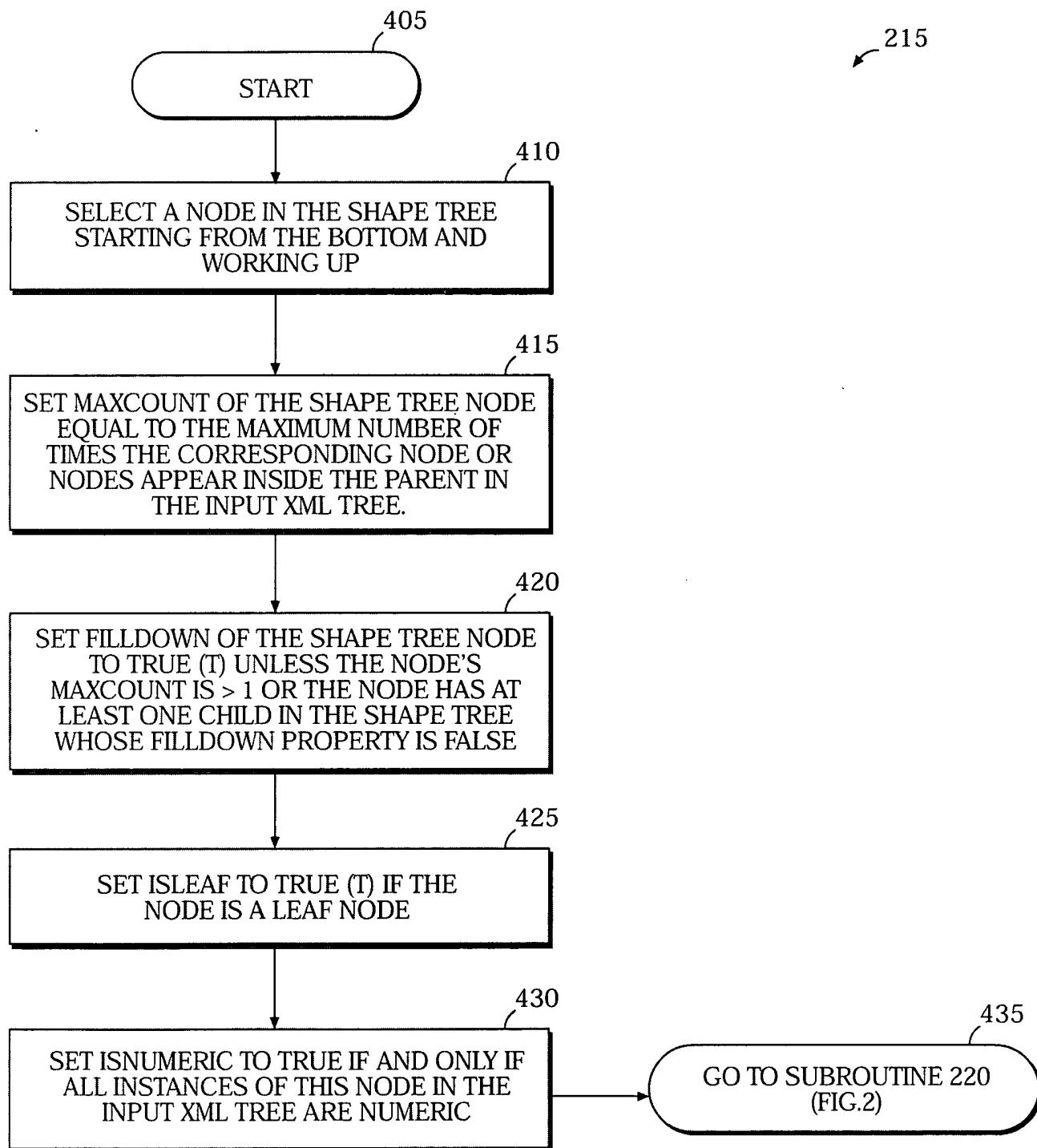


FIG.4



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BUILD LIST OF OUTPUT COLUMNS

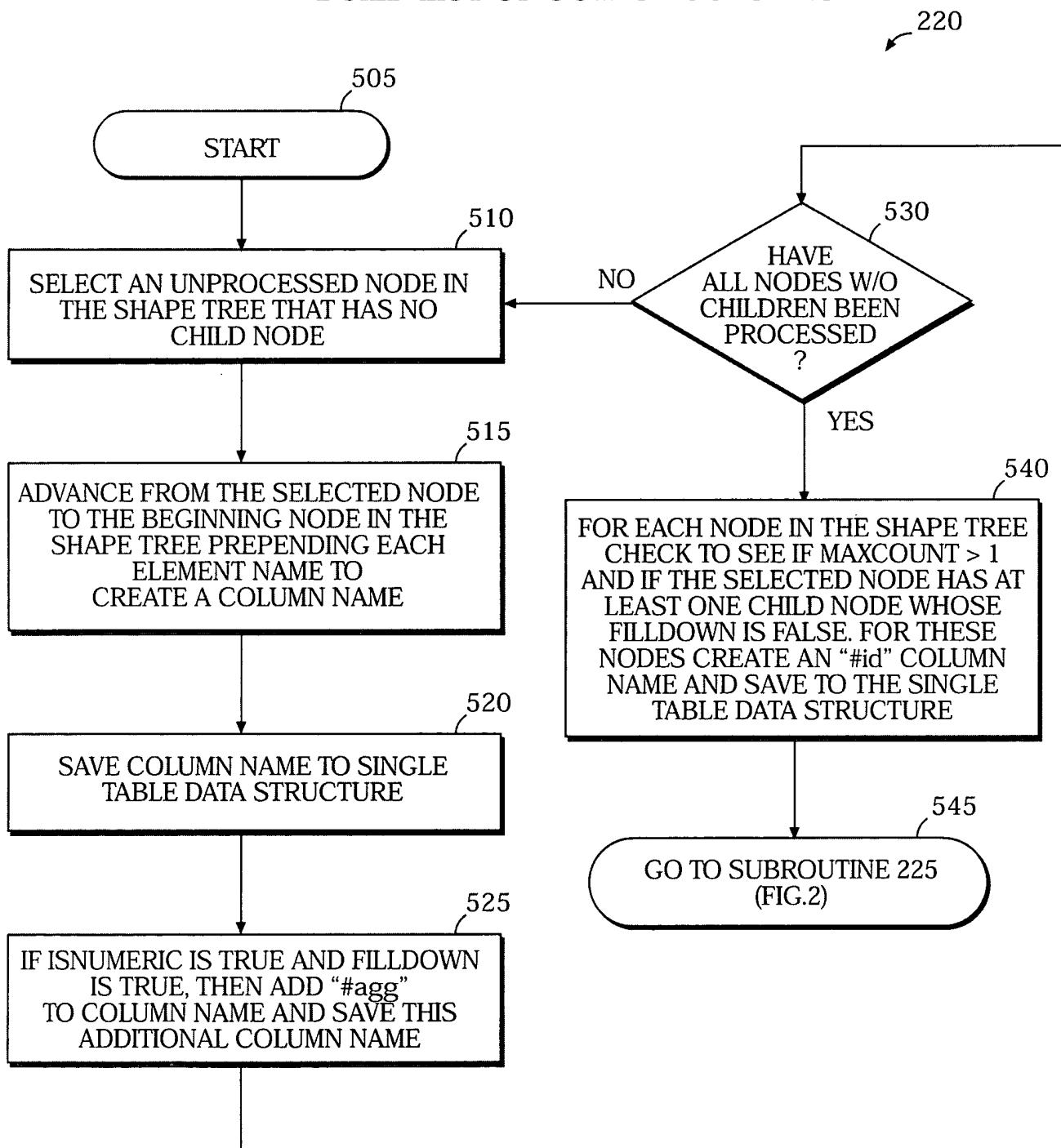


FIG.5



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FLATTEN DATA

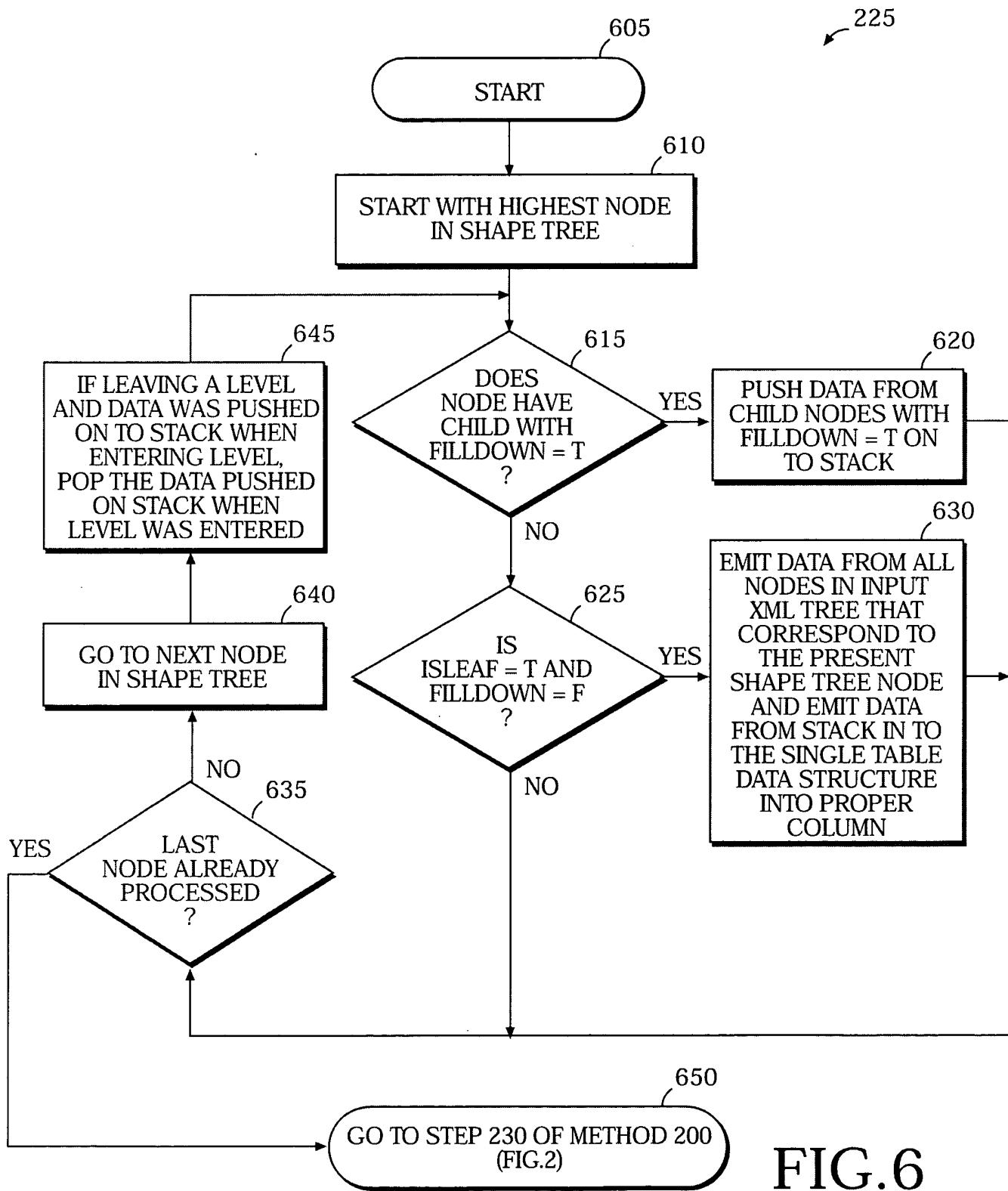


FIG.6



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INPUT XML FILE

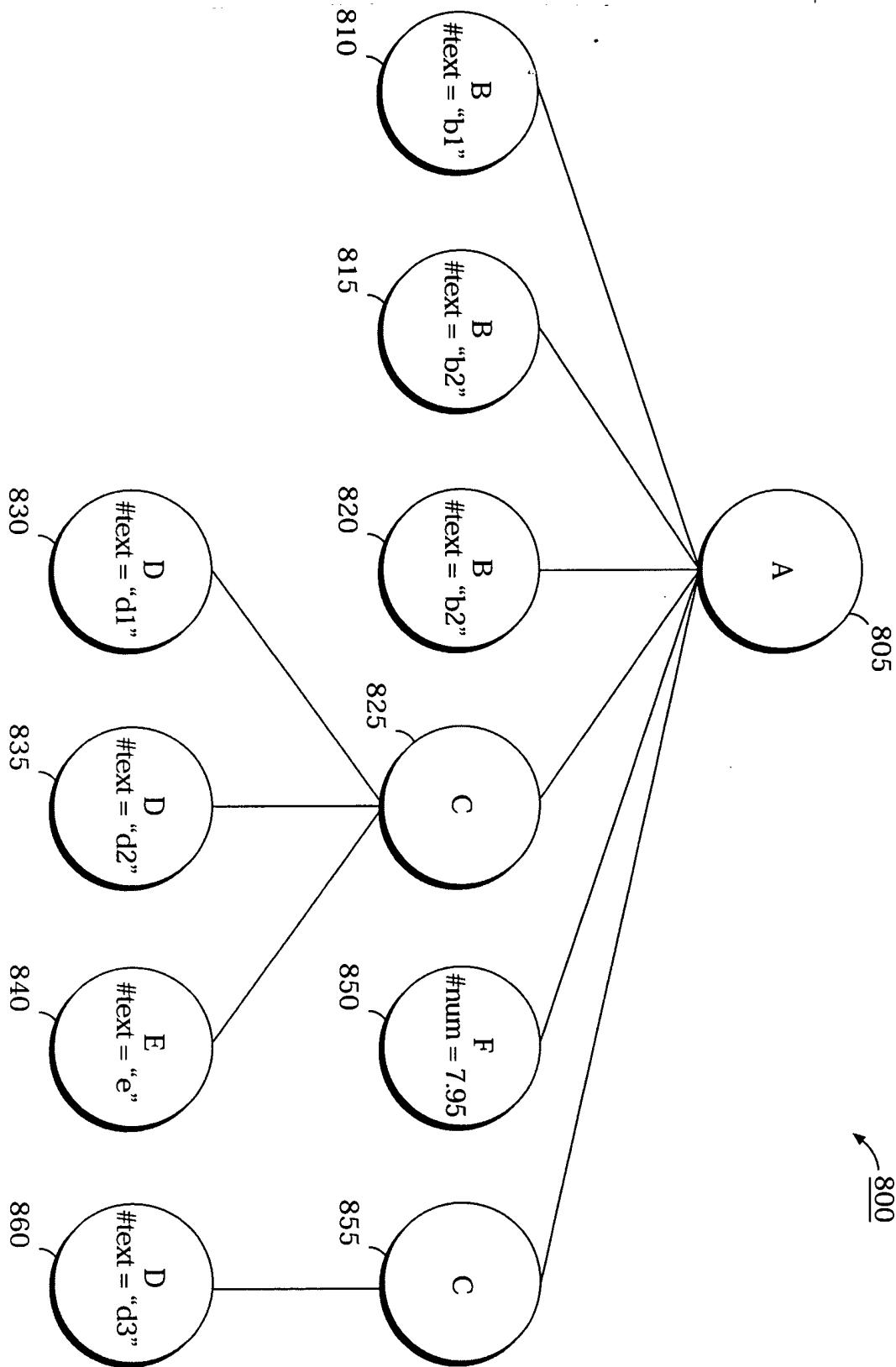
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< A >		-705
	< B > b 1 < / B >	-710
	< B > b 2 < / B >	-715
	< B > b 3 < / B >	-720
	< C >	-725
		-730
	< D > d 1 < / D >	-735
		-740
	< D > d 2 < / D >	-745
		-750
	< E > e < / E >	-755
	< / C >	-760
	< F > 7.95 < / F >	-765
	< C >	-770
	< D > d 3 < / D >	
	< / C >	
< / A >		

FIG.7



INPUT XML TREE





SHAPE TREE

905

A

900

B
MAXCOUNT = 3
FILDDOWN = F
ISLEAF = T
ISNUMERIC = F

C
MAXCOUNT = 2
FILDDOWN = F
ISLEAF = F
ISNUMERIC = F

F
MAXCOUNT = 1
FILDDOWN = T
ISLEAF = T
ISNUMERIC = T

910

915

920

D
MAXCOUNT = 2
FILDDOWN = F
ISLEAF = T
ISNUMERIC = F

E
MAXCOUNT = 1
FILDDOWN = T
ISLEAF = T
ISNUMERIC = F

925

930

FIG.9

FLAT DATA STRUCTURE

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1040		1045		1050		1055		1060		1065			
1005 ...	/ A / B / #text	1010 ...	b 1	1015 ...	b 2	1020 ...	b 3	1025 ...	1	1030 ...	1	1035 ...	2
	/ A / C / #id								d1			d3	
	/ A / C / D / #text								e				
	/ A / C / E / #text												
	/ A / F / #num												
	/ A / F / #agg												
	7.95												
	7.95												
	7.95												
	7.95												
	7.95												

